



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,633	08/06/2003	Samuel Vinod Thamboo	839-1439	1632
30024	7590	05/10/2006	EXAMINER	
NIXON & VANDERHYE P.C. 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			SHEEHAN, JOHN P	
			ART UNIT	PAPER NUMBER

1742

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Interview Summary</b>	Application No.	Applicant(s)	
	10/604,633	THAMBOO ET AL.	
	Examiner	Art Unit	
	John P. Sheehan	1742	

All participants (applicant, applicant's representative, PTO personnel):

- (1) John P. Sheehan. (3) \_\_\_\_\_  
 (2) Mr. Michael Keenan. (4) \_\_\_\_\_

Date of Interview: 09 May 2006.

Type: a) ☒ Telephonic b) ☐ Video Conference  
 c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.  
 If Yes, brief description: \_\_\_\_\_

Claim(s) discussed: 1,2,4,6 and 7.

Identification of prior art discussed: \_\_\_\_\_

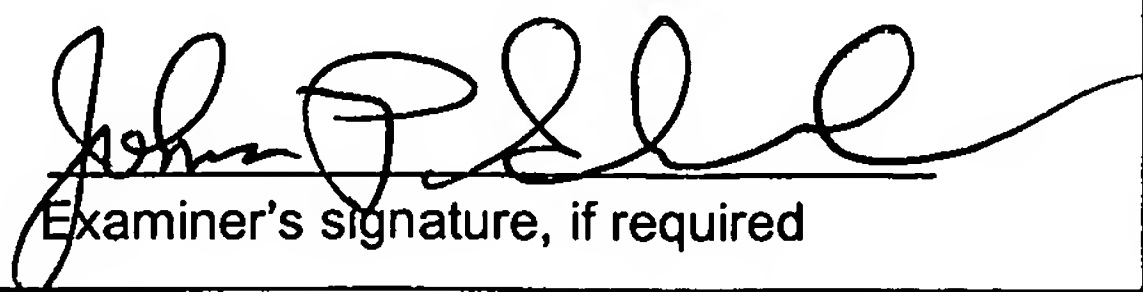
Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicants faxed the attached proposed amendment to the Examiner. The Examiner indicated that the amendment would overcome the rejection under 35 USC 112 set forth in paragraph 2 on page 2 of the Examiner's action. The Examiner indicated that he would maintain the position set forth in the Office action in that applicants' have not provided any evidence to support their position that their claimed cooling rates give unexpected results.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

  
 Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Attachments: Applicants' proposed response.

**Nixon & Vanderhye PC.**  
ATTORNEYS AT LAW11TH FLOOR  
901 NORTH GLEBE ROAD  
ARLINGTON, VIRGINIA 22203-1808TELEPHONE: (703) 816-4000  
FACSIMILE: (703) 816-4100  
WRITER'S DIRECT DIAL NUMBER:  
**(703) 816-4016****FACSIMILE COVER SHEET**  
**PLEASE DELIVER IMMEDIATELY!!!!**Our Ref.: 839-1439  
Appln. No.: 10/604,633 Date: May 5, 2006To: Examiner J. P. Sheehan  
Firm: U.S.P.T.O.  
Facsimile No.: (571) 273-8300-1249  
From: Michael KeenanNumber of Pages (including cover sheet): 6  
(IF YOU DO NOT RECEIVE ALL OF THE PAGES OR ENCOUNTER DIFFICULTIES IN TRANSMISSION,  
PLEASE CONTACT US IMMEDIATELY AT (703-816-4000).R. Lagos  
FACSIMILE OPERATOR

ATTACHMENT/S:

MESSAGE:**CONFIDENTIALITY NOTE**

The documents accompanying this facsimile transmission contain information belonging to Nixon & Vanderhye, which is confidential and/or legally privileged. This information is only intended for the use of the individual or entity named above. IF YOU ARE NOT THE NAMED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISCLOSURE, COPYING, DISTRIBUTION OR TAKING OF THIS INFORMATION FOR ANY USE WHATSOEVER IS STRICTLY PROHIBITED. If you have received this facsimile in error, please immediately contact us by telephone to arrange for return of the original documents to us.

#1070948 v1 - 839-1439 Faxcover

**DRAFT****Best Available Copy****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

THAMBOO et al.

Atty. Ref.: 839-1439; Confirmation No. 1632

Appl. No. 10/604,633

TC/A.U. 1742

Filed: August 6, 2003

Examiner: J. P. Sheehan

For: TURBINE ROTOR HEAT TREATMENT PROCESS

\* \* \* \* \*

May 4, 2006

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**AMENDMENT**

Responsive to the Official Action dated February 9, 2006, please amend the  
above-identified application as follows:

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2.

**Remarks/Arguments** begin on page 4.

THAMBOO et al.  
Appl. No. 10/604,633  
May 5, 2006

Best Available Copy

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of heat treating a turbine rotor disk varying in cross sectional shape from a relatively thick radially inner portion to a relatively thinner radially outer portion to obtain different radial properties at different radial locations in the rotor disk comprising:

- a) heating the rotor disk for a period of from 4 to 10 hours at a temperature of 1800°F;
- b) cooling the rotor disk to a temperature of about 1550°F at a rate of from 1° to 5°F/min;
- c) holding the rotor disk at a stabilization temperature of about 1550°F for a period of from about 2 to about 4 hours;
- d) cooling the rotor disk to room temperature at a rate of 20° - 40°F/min;
- e) precipitation aging the rotor disk by heating the rotor disk to temperature of 1325°F for 8 hours, and
- f) cooling the rotor disk.

2. (Original) The method of claim 1 wherein step a) is carried out for 4 hours.

3. (Canceled)

4. (Original) The method of claim 1 wherein step c) is carried out for 2 hours.

5. (Canceled)

6. (Currently Amended) The method of claim 5-1 wherein step d) is carried out by cooling the rotor disk at a rate of about 25°F/min.



THAMBOO et al.  
Appl. No. 10/604,633  
May 5, 2006

**Best Available Copy**

7. (Original) The method of claim 1 wherein step f) is carried out by furnace cooling the rotor disk at a rate of 100°F/hour to 1150°F, holding it at 1150°F for 8 hours and then air cooling the rotor disk to room temperature.

8-19. (Canceled)

THAMBOO et al.  
Appl. No. 10/604,633  
May 5, 2006

**Best Available Copy**

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the outstanding grounds of rejection is respectfully requested in light of the above amendments and the remarks that follow.

The Examiner has rejected claims 1-10 and 12-16 under 35 U.S.C. § 112, first paragraph, as based on a non-enabling disclosure. Specifically, the Examiner contends that the omission of specific cooling rates in the claims renders the claimed subject matter non-enabling since those cooling rates are, in the Examiner's view, critical or essential to the process.

In response, applicants have amended independent claim 1 to incorporate the cooling rate limitations from originally filed dependent claims 3 and 5. At the same time, applicants have canceled claims 3, 5 and 8-16. With these changes, the Section 112, first paragraph rejection has been overcome with respect to remaining claims 1, 2, 4, 6 and 7.

The Examiner has also rejected claims 1-16 under 35 U.S.C. § 103 as unpatentable over the acknowledged prior art as disclosed in paragraphs 4-7 of the application as filed.

It is respectfully submitted that the disclosed "heat treatment A" described in paragraphs 4-7 of the application as filed, while containing certain elements of the claimed process neither discloses nor suggests the claimed invention as a whole. More specifically, the known heat treatment A neither contains nor suggests the specific cooling rates now incorporated into independent claim 1, the sole independent claim remaining in the application.

As the Examiner has also recognized, these limitations are significant to the invention and it is believed apparent from the specification that the cooling rates are not simply obvious matters of choice. In this regard, there is nothing in the acknowledged prior art that recognizes that a turbine rotor disk can be treated so as to have different properties at different locations as a result of the utilization of a certain defined sequence of heat treatment steps associated with individual cooling steps at specific cooling rates. The result is that the outer diameter and



THAMBOO et al.  
Appl. No. 10/604,633  
May 5, 2006

surface of the turbine rotor disk will have good creep and crack growth resistance, while the interior and bore will have high strength at temperatures below 750°F (see paragraph 15 bridging pages 3 and 4 of the application as filed). A similar statement in the disclosure may be found in paragraph 18. The Examiner's attention is also directed to paragraphs 26 through 33 of the application, demonstrating the significance of the claim limitations. When such limitations are disclosed in the context of a specific problem not recognized in the prior art, it is improper to simply conclude obvious matter of choice with respect to such limitations. Further, in this regard, the statement with respect to air cooling in the paragraph bridging pages 4 and 5 of the Official Action is not relevant insofar as applicants disclose air cooling only in step f. In other words, the specific cooling rates as added to independent claim 1 do not simply occur inherently as a result of air cooling.

It is respectfully submitted that the remaining claims disclose a process that is neither disclosed nor suggested in the prior art and therefore remaining claims 1, 2, 4, 6 and 7 are in condition for immediate allowance. In the event, however, any small matter remain outstanding, the Examiner is encouraged to telephone the undersigned so that the prosecution of this application can be expeditiously concluded.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: \_\_\_\_\_

Michael J. Keenan  
Reg. No. 32,106

MJK:rrl  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

**Best Available Copy**